

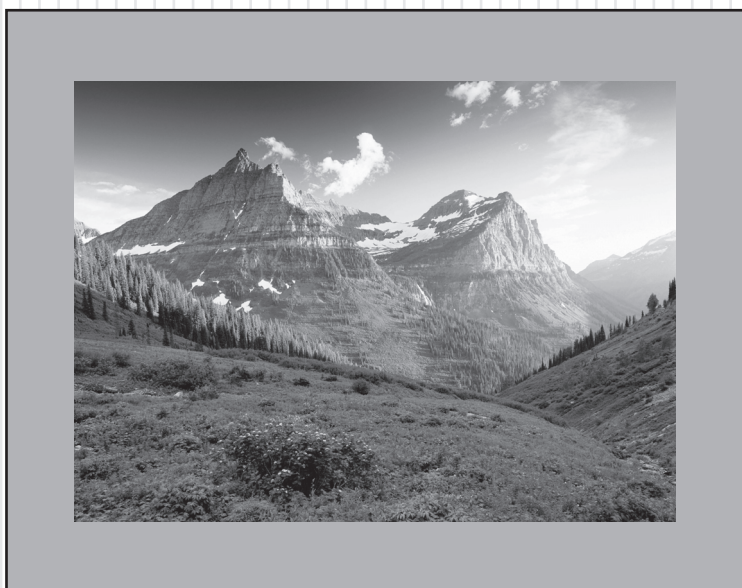
Montana *Comprehensive Assessment* *System* (MontCAS, Phase 2 CRT)

Student Name:

School Name:

Teacher/Class:

GRADE 6
COMMON RELEASED ITEMS
SPRING 2008



OPI

OFFICE OF PUBLIC INSTRUCTION

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General Directions

This test contains six sessions: three in reading and three in mathematics. The sessions are made up of multiple-choice questions and questions for which you must show your work or write out your answers. Write your answers to all of the questions in your Student Response Booklet. For the reading parts of the test, read each selection before answering the questions.

For each multiple-choice question, choose the best answer. Fill in the bubble in your Student Response Booklet that corresponds to your answer choice for that question.

Some questions ask you to show your work or to write out your answers. Write your answers to these questions in the spaces provided in your Student Response Booklet. Your answers must fit in the spaces provided. Any part of an answer outside the box might not be scored.

Be sure to answer all parts of each question, and to answer completely. For example, if a question asks you to explain your reasoning or show your work, be sure to do so. You can receive points for a partially correct answer, so try to answer every question.

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Reading Session 1

This test session includes a reading selection and multiple-choice questions. After you read the selection, answer the questions about it in the spaces provided in your Student Response Booklet. You may not use a dictionary or any other reference tool during this session.

Read this article about making your own borax crystal snowflake. Then answer the questions that follow.

Borax Crystal Snowflakes

Janeen R. Adil

WOULDN'T IT BE fun to make your own snowflakes? With just a few items and some kitchen science, you can create borax crystal snowflakes. Borax, a chemical produced from either the mineral borax or from the mineral kernite, is often used in industry. You can find borax in the grocery store's laundry section, in boxes labeled "laundry booster."

Every bit as sparkly as real snowflakes, your borax crystal snowflakes will last much, much longer! Here's how to make them.

What You'll Need:

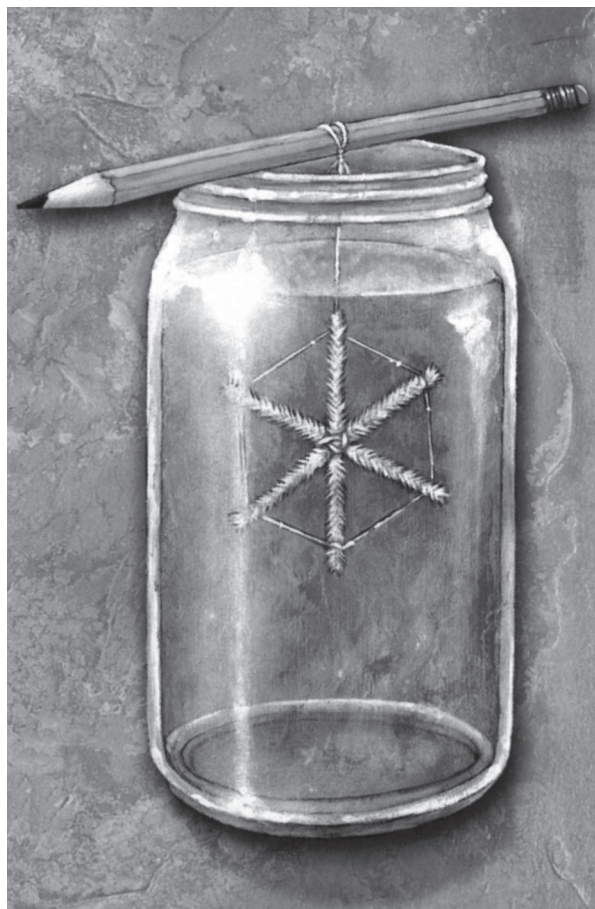
- white pipe cleaner
- string
- pencil
- widemouthed pint jar
- borax
- liquid food coloring (optional)

What to Do:

1. Start by cutting the pipe cleaner into 3 equal sections. Firmly twist the sections together in the center to form a 6-sided star shape. If necessary, trim the sections so that they're the same length.
2. Now take a piece of string and tie it to the outer edge of one of the snowflake's "arms." Continue on to the next arm, looping and tying it onto the outer edge. Work your way all around the snowflake. It may take some adjusting to get the tension right so that the string and the pipe cleaners will lie flat. When you reach your starting point, knot the

string and cut it off. Then tie a separate piece of string to the top of one arm and loosely tie the other end around a pencil.

3. Next, have an adult fill the pint jar with boiling water. Stir in 6 tablespoons of borax. Keep stirring until the borax is dissolved, but don't worry if there's a bit of powder left on the bottom of the jar.



4. Lower the pipe cleaner snowflake into the borax solution, laying the pencil across the top of the jar and tightening the string so that the snowflake hangs freely. Leave the jar overnight where it won't be disturbed.

In the morning, you'll discover that shiny crystals cover the string and the pipe cleaners, creating a beautiful "snowflake." It may seem like magic, but what happened is actually basic science.

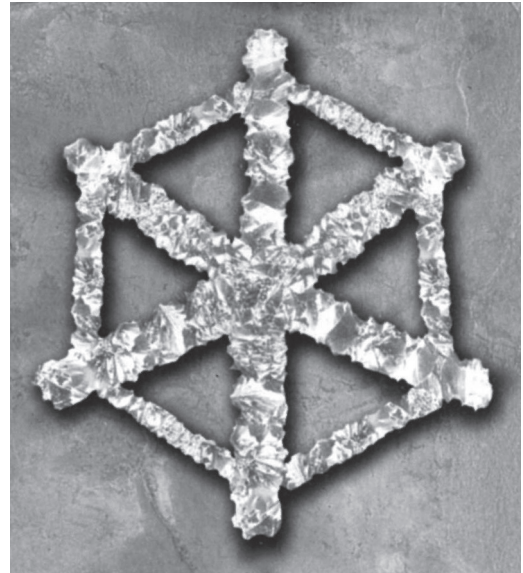
When water is heated, its molecules move farther apart. By stirring the borax crystals into hot water, there is room for more of the crystals to dissolve. When no more crystals can be dissolved, the liquid reaches saturation.

Then, as the water cools, its molecules move closer together again; this means less room for the dissolved borax. Crystals begin to form and cling to the nearest convenient objects: the pipe cleaners and the string.

Just as with real snowflakes, each borax crystal snowflake is unique. Try experimenting with other sizes and shapes—just be sure that the pipe cleaner snowflake will fit inside the jar.

For a variation, add a little food coloring to the borax solution. The crystals will remain clear, but the string and pipe cleaners will be lightly colored, giving the whole snowflake a delicate hue.

Hang your borax crystal snowflakes in a window as sun catchers—or anywhere else you want a pretty wintertime decoration.



Mark your answers in the section marked "Reading—Session 1" in your Student Response Booklet.

1. Based on the article, what can borax be used for other than making crystal snowflakes?
 - A. shining shoes
 - B. polishing dishes
 - C. cleaning clothes
 - D. scrubbing floors
2. Which step comes **first** in making a crystal snowflake?
 - A. heating the borax solution
 - B. preparing the pipe cleaner
 - C. knotting the separate strings
 - D. hanging the crystal snowflake



3. In step 2, the word “arms” is in quotation marks to show that it is
- A. not being used to mean body parts.
 - B. not the point of the experiment.
 - C. part of a quote spoken aloud.
 - D. a word defined in the article.
4. In the experiment, one use of the string is to
- A. hold the cover on top of the jar.
 - B. keep the jar steady on the counter.
 - C. connect several snowflakes together.
 - D. form the outside edge of the snowflake.
5. The liquid food coloring is listed as optional because it is
- A. hard to find.
 - B. not necessary.
 - C. the last material added.
 - D. the most important material.
6. What does the sentence, “It may seem like magic, but what happened is actually basic science” mean?
- A. The snowflakes appear overnight.
 - B. The results are easily explained.
 - C. The activity should not be done at home.
 - D. The snowflakes are not an exciting sight.
7. Which book would **most likely** have information similar to what is in this article?
- A. *Winter Weather Adventures*
 - B. *Simple Science Experiments*
 - C. *Stories of Science and Nature*
 - D. *A Beginner’s Guide to Weather*

Reading Session 2

This test session includes a reading selection and multiple-choice questions. After you read the selection, answer the questions about it in the spaces provided in your Student Response Booklet. You may not use a dictionary or any other reference tool during this session.

Animal Disguises

The article “Animal Disguises” used for the following items was taken from *Greenwings* (www.greenwings.org, fall 2000). Due to copyright restrictions, we are unable to reprint the passage in this document.



Mark your answers in the section marked "Reading—Session 2" in your Student Response Booklet.

28. The **main** purpose of the first paragraph is to explain
- A. where camouflage is found.
 - B. what camouflage looks like.
 - C. when camouflage starts.
 - D. why camouflage is helpful.
29. Color changes first occur in an animal's
- A. fur.
 - B. cells.
 - C. feet.
 - D. skin.
30. In paragraph 3, what does the word undergo mean?
- A. experience
 - B. discover
 - C. imitate
 - D. create
31. Countershading works for water animals because it
- A. allows them to swim away faster from predators.
 - B. gives them a way to use shallow and deep water.
 - C. protects them from predators above and below them.
 - D. provides them with ways to hide at night.
32. In this article, the author uses questions **mainly** to
- A. introduce new topics to the reader.
 - B. encourage readers to research different topics.
 - C. demonstrate ways information can be found.
 - D. provide a list of information that is unknown.
33. How is the information in this article organized?
- A. by cause and effect
 - B. in chronological order
 - C. by different topics
 - D. in order of importance
34. Which source would be the **best** to use to find additional information about animal camouflage?
- A. a Web site about underwater life
 - B. an Internet article about the author
 - C. a magazine about science and nature
 - D. a documentary about endangered species

Reading Session 3

This test session includes a reading selection, multiple-choice questions, and a question for which you must write out your answer. After you read the selection, answer the questions about it in the spaces provided in your Student Response Booklet. You may not use a dictionary or any other reference tool during this session.

Read this story about a family that lives on a Caribbean island in the 1400s. Then answer the questions that follow.

Star Boy

Michael Dorris

“Why are you awake so early?” my mother asked me that morning. “Are you becoming the same kind of flower as your sister, the kind that bends to the east and calls the sun?”

I didn’t like being anything like my sister, who in fact is called Morning Girl because she gets up before everyone else, so I told a different story.

“I don’t need sleep anymore,” I said.

“That’s too bad.” My mother shook her head and smoothed my hair flat. “How will you dream if you don’t sleep? How will you hear yourself?”

I thought about this problem.

“Maybe you’re a bat,” my mother suggested, smiling at me, “and will dream all day while the rest of us work. How lucky for you.”

I thought of bats and how they race through the dark sky fast as late summer rain. I thought of how the wind would feel against my skin if I could fly.

“It’s true,” I said. “I *will* sleep today.”

“And hang upside down from the limb of a tree?” asked Morning Girl, who always listened to what anyone said even though it had nothing to do with her. “I want to see that. Maybe I’ll poke you with a stick.”

“And maybe during the night I’ll land in your hair,” I told her. “Maybe I’ll build a nest.”

11 “Bats don’t make nests,” she pointed out, but still she raised her hand to her head at the idea.

“Maybe I’m a new kind of bat.”

“What is it about the night that you like?” my mother asked, to stop the argument—but not just for that reason. She was truly interested and always

listened closely to what I said. Now she stopped cleaning a manioc root and looked at me.

“I like . . .,” I began, and thought back to the
14 white sand scattered on the sky’s black beach. “I like the stars. I like to look down at them.”

15 “You don’t look *down* at the sky,” Morning Girl contradicted. “You look *up*.”

“Maybe not if you’re a bat,” my father said, his voice very serious. His eyes were still closed, and so it seemed as though his words came from nowhere. We couldn’t tell if he was joking or not. “But no one is asking the right question,” he continued. “Why *don’t* bats sleep at night? Perhaps they like the same things as this Star Boy does.”

Star Boy.

That was the first time I heard my new name. Star Boy. Before that I was called “Hungry” because
18 that’s what I was most of the time. I liked “Star Boy” much better. No one spoke as we all listened, tested the weight of the words.

Star Boy.

My mother smiled. “Who is talking?” she asked at last. “Who has found such a good question? Who has thought of such a fine name for my son?”

“It is the father of a bat,” said my father. “The father of a morning flower. It is the husband of the mother of a bat and a flower. It is a man who is surrounded by people who talk when others are trying to sleep. I think I must be in the wrong family, since I am the only one who knows the value of rest. I think—”



My mother looked at Morning Girl and me with her eyebrows raised, then slipped a piece of clean fruit between my father's lips to stop his words. We all watched while he chewed. He still did not open his eyes.

"No," he said after he swallowed. "This is not the wrong family. There is only one person who knows where to find fruit so sweet, only one person with fingers so gentle."

My mother lowered her eyes, but she was pleased. "Why do bats like the dark?" she asked me, returning to our conversation. "Tell us, Star Boy."

25 When she used my new name I knew it was now mine for good, and at that moment I decided

that I would become an expert, a person who would be asked questions about the night and who would know the answers.

26 "Because it's big," I said. "Because there are special things to see if you watch closely. Because in it you can be dreaming even if you're awake. Because someone must remember the day while others sleep and call it when it's time for the sun to come home."

My father opened his eyes at last, propped himself on his elbows, and nodded.

"Star Boy," he said.

Mark your answers in the section marked "Reading—Session 3" in your Student Response Booklet.

69. In the first paragraph, why does the mother compare Star Boy to his sister?
- A. Neither believes they need sleep.
 - B. They both are awake before the sun rises.
 - C. Neither enjoys getting up in the morning.
 - D. They both listen to other people's conversations.

70. In paragraph 11, what does the phrase "raised her hand to her head" **most likely** suggest about Morning Girl?
- A. She knows a lot about bats.
 - B. She is reacting to the idea.
 - C. She is feeling confident.
 - D. She thinks her brother is lying.

71. In paragraph 14, the "white sand" refers to the
- A. bats.
 - B. sky.
 - C. stars.
 - D. clouds.

72. In paragraph 15, the word contradicted means
- A. allowed.
 - B. disagreed.
 - C. warned.
 - D. wondered.



73. In paragraph 18, what does the phrase “tested the weight of the words” **most likely** mean?
- A. The family does not understand what was meant.
 - B. The family does not appreciate the idea.
 - C. The family is too tired to keep talking.
 - D. The family is considering what was said.
74. What is Father’s problem in the story?
- A. He wants to sleep.
 - B. He does not like bats.
 - C. He wants to eat.
 - D. He does not like the night.
75. What is the **most likely** reason Star Boy wants to become an expert on the night?
- A. He wants to hear himself dream.
 - B. He wants to live up to his new name.
 - C. He wants to build nests in the dark.
 - D. He wants to race through the sky.
76. The **main** purpose of paragraphs 25 and 26 is to show
- A. how Star Boy will live up to his new name.
 - B. why the narrator is called Star Boy.
 - C. how well Star Boy understands bats.
 - D. why Star Boy is different from his sister.
77. How would Star Boy **most likely** describe Morning Girl?
- A. careless
 - B. friendly
 - C. cheerful
 - D. interfering
78. Based on the story, why are names important in Star Boy’s culture?
- A. People are always named after their parents.
 - B. People’s names are based on their individual personality.
 - C. People are named only when they are born.
 - D. People’s names are determined by the position of the stars.
79. Throughout the story, Mother’s actions show that she is
- A. frustrated.
 - B. caring.
 - C. bored.
 - D. amusing.
80. Which type of story is this?
- A. realistic fiction
 - B. science fiction
 - C. fantasy
 - D. fable



Write your answer in the space provided for it in your Student Response Booklet.

81. Explain why “Star Boy” is a good name for the narrator. Use information from the story to support your answer.

Mathematics

Session 1 (No Calculator)

This test session includes multiple-choice questions and questions for which you must show your work or write out your answer. You may NOT use a calculator during this session.

Mark your answers in the section marked "Mathematics—Session 1 (No Calculator)" in your Student Response Booklet.

- Which expression is equivalent to 2^5 ?
 - 2×5
 - 5×5
 - $2 \times 2 \times 2 \times 2 \times 2$
 - $5 \times 5 \times 5 \times 5 \times 5$
- At a school cafeteria, $\frac{4}{5}$ of the students surveyed said they preferred milk rather than water. What percent of the students surveyed said they preferred milk?
 - 12.5%
 - 40%
 - 70%
 - 80%
- Haley paid \$2.89 for a 16-ounce jar of peanut butter. What is the price, to the nearest cent, per ounce of peanut butter in the jar?
 - \$0.11
 - \$0.18
 - \$1.13
 - \$1.81

- Five students drew line segments. They recorded the lengths of their line segments in the chart below.

Line Segment Lengths

Student	Length (in inches)
Ingrid	$3\frac{6}{8}$
Hannah	$3\frac{2}{4}$
Derek	$3\frac{3}{4}$
Julia	$3\frac{10}{16}$
Andy	$3\frac{14}{16}$

Which two students' line segments are the same length?

- Ingrid and Julia
- Ingrid and Derek
- Hannah and Julia
- Hannah and Andy



9. Jillian has traveled 40 miles of a 197-mile trip. Approximately what fraction of the trip has she traveled?

A. $\frac{1}{6}$
B. $\frac{1}{5}$
C. $\frac{1}{4}$
D. $\frac{1}{3}$

10. Mrs. Harris has a coupon for a 25% discount on any one book. The regular cost of the book she wants to buy is \$32. What will be the discount on the book?

A. \$ 7
B. \$ 8
C. \$ 9
D. \$16

16. The chairs in a theater are arranged in the pattern described below.

- The 1st row has 12 chairs.
- Each of the following rows has 2 more chairs than the previous row.

How many chairs are in the **8th row** of the theater?

A. 16
B. 24
C. 26
D. 28



Write your answers in the spaces provided in your Student Response Booklet. Show all of your work.

18. What is the value of the expression $12x + 6$ when $x = 9$?

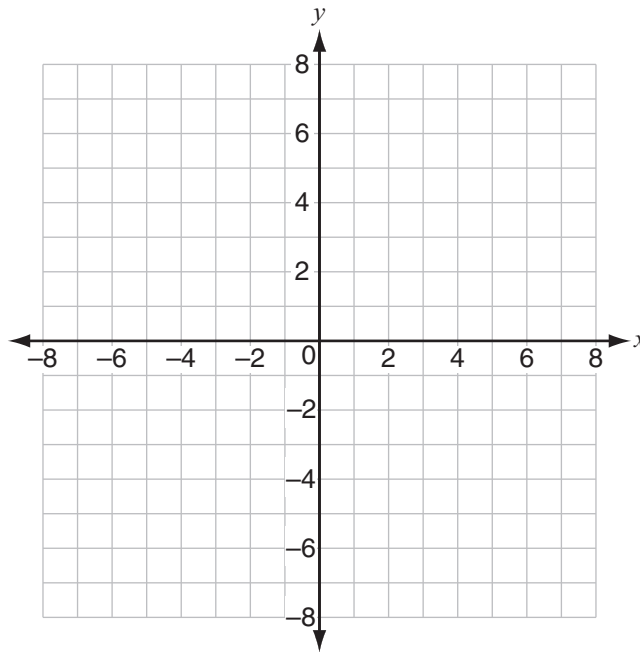
19. Compute. Express your answer as a mixed number in **lowest terms**.

$$\frac{9}{10} \times \left(\frac{1}{2} + \frac{3}{4} \right)$$



Write your answer in the space provided for it in your Student Response Booklet. Show all of your work.

23. Copy and label the coordinate grid below on the grid in your Student Response Booklet.



a. These are the coordinates of $\triangle MNP$.

- $M(4, -5)$
- $N(2, -2)$
- $P(6, 0)$

Draw and **label** $\triangle MNP$ on the coordinate grid in your Student Response Booklet.

b. On the same coordinate grid, translate (slide) $\triangle MNP$ 1 unit left and 6 units up.

- **Draw** the translated triangle.
- **Label** the vertices RST .

c. On the same coordinate grid, reflect (flip) $\triangle RST$ over the y -axis.

- **Draw** the reflected triangle.
- **Label** the vertices XYZ .

Mathematics

Session 2 (Calculator)

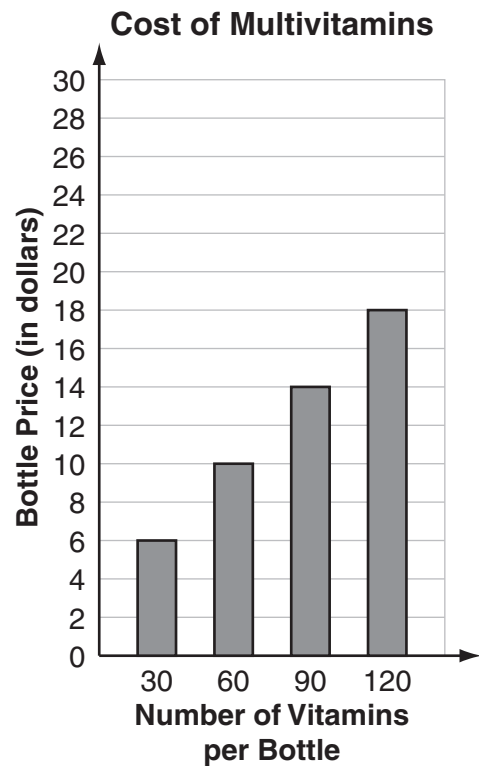
This test session includes multiple-choice questions. You may use a calculator during this session.

Mark your answers in the section marked "Mathematics—Session 2 (Calculator)" in your Student Response Booklet.

24. Gwen can type 480 words in 15 minutes.
What is her typing speed in words per minute?

A. 32
B. 36
C. 40
D. 44

26. A company sells bottles of multivitamins.
The bar graph below shows the cost for each bottle.



Based on the graph, about how much would a bottle containing 180 multivitamins cost?

A. \$20
B. \$22
C. \$26
D. \$35



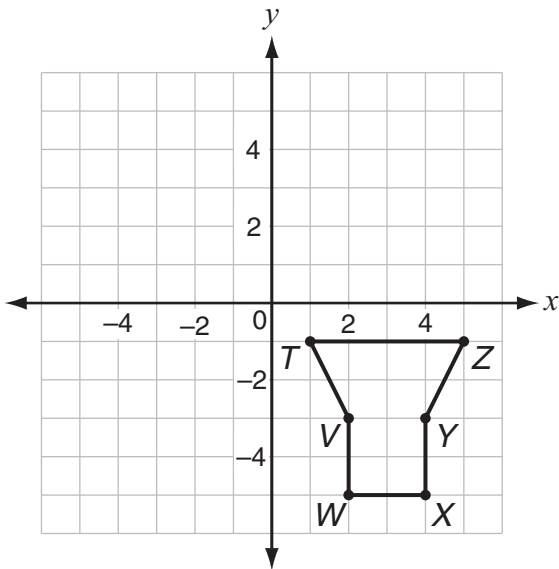
30. Lance wants to solve the equation below.

$$0.01 \times 0.21 = ?$$

How will the product compare with the factors?

- A. The product will be less than both factors.
- B. The product will be greater than both factors.
- C. The product will be less than one factor and greater than the other factor.
- D. The product may be less than or greater than either factor.

38. David will translate (slide) the figure below 2 units left and 3 units up.



What will be the coordinates of the image of point *Y* after the figure is translated?

- A. (0, 0)
- B. (2, 0)
- C. (2, -1)
- D. (6, 0)

40. The chart below shows the average annual rainfall in four of the world's driest places.

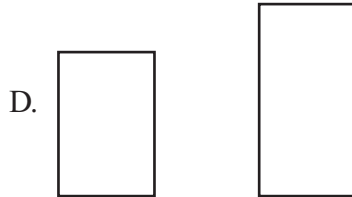
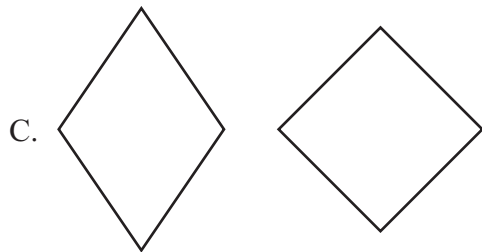
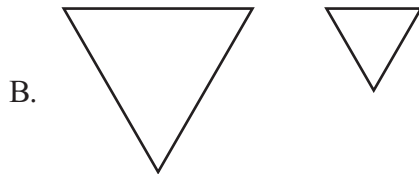
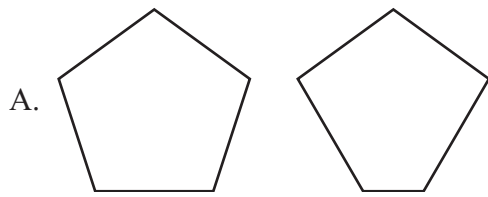
Rainfall in the World's Driest Places

Place	Average Annual Rainfall (in inches)
Antofagasta, Chile	0.19
Aswan, Egypt	0.02
Ica, Peru	$\frac{1}{10}$
Luxor, Egypt	$\frac{3}{100}$

Which place has the **lowest** average annual rainfall?

- A. Antofagasta, Chile
- B. Aswan, Egypt
- C. Ica, Peru
- D. Luxor, Egypt

43. Which pair includes two similar figures?



44. The distance around the outside edge of a ball field is 440 yards. Max ran around the outside edge of the ball field 8 times. How far did he run?

A. $\frac{1}{2}$ mile

B. $\frac{2}{3}$ mile

C. 2 miles

D. 3 miles

45. The table below lists the number of minutes Jennifer spent at the computer lab each week for the past six weeks.

Jennifer's Computer Lab Time

Week	Number of Minutes
1	44
2	50
3	32
4	94
5	72
6	44

What is the mean (average) number of minutes Jennifer spent at the computer lab each week?

A. 44

B. 47

C. 56

D. 63

Mathematics

Session 3 (Calculator)

This test session includes multiple-choice questions. You may use a calculator during this session.

Mark your answers to questions in the section marked "Mathematics—Session 3 (Calculator)" in your Student Response Booklet.

50. The chart below shows the prices of pop and popcorn at a movie theater.

Prices of Pop and Popcorn

Size	Pop Price	Popcorn Price
Small	\$1.95	\$3.95
Medium	\$2.95	\$4.50
Large	\$3.95	\$5.25

Mr. Clark bought 3 medium pops, 1 small pop, and 2 large popcorns for his family. How much did Mr. Clark spend in all?

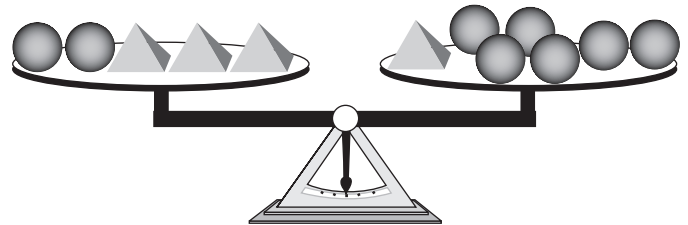
- A. \$19.30
 - B. \$19.35
 - C. \$21.30
 - D. \$23.30
51. Courtney bought a fishbowl and some goldfish.

- The fishbowl costs \$12.
- Each goldfish costs \$1.99.

Which expression can be used to find the total amount of money Courtney spent if she bought a fishbowl and n goldfish?

- A. $12 + 1.99n$
- B. $(12 + n) \times 1.99$
- C. $12 \times (1.99 + n)$
- D. $12n + 1.99$

53. The scale shown below is balanced.



Which equation is correct?

- A. $\triangle = \bigcirc \bigcirc$
- B. $\triangle \triangle = \bigcirc \bigcirc$
- C. $\triangle = \bigcirc \bigcirc \bigcirc \bigcirc$
- D. $\triangle \triangle \triangle = \bigcirc \bigcirc \bigcirc \bigcirc$



56. The chart below shows the distance Jordan will swim with each kind of stroke he plans to use during his swim practice.

Jordan’s Swimming Practice

Stroke	Distance (in meters)
Sidestroke	200
Freestyle	800
Backstroke	300
Butterfly	100

How many **kilometers** does Jordan plan to swim in all?

- A. 0.14 kilometer
- B. 1.4 kilometers
- C. 14 kilometers
- D. 140 kilometers

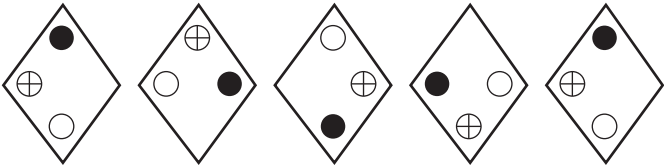
57. The box below lists the resting heart rate, in beats per minute, of each student in Ms. Donovan’s gym class.

60	48	80	66	52	72
56	76	56	82	74	70

What is the median resting heart rate of Ms. Donovan’s students?

- A. 68
- B. 66
- C. 64
- D. 56

58. The figures below are the first five terms in a geometric pattern.



What figure is **term 12** in this pattern?

- A.
- B.
- C.
- D.

60. The population of a country is 1,273,111,290. Which of the following is another way to write 1,273,111,290?

- A. one million two hundred seventy-three thousand eleven hundred one two hundred ninety
- B. one million two hundred seventy-three thousand one hundred eleven two hundred ninety
- C. one billion two million seventy-three thousand one hundred eleven two hundred ninety
- D. one billion two hundred seventy-three million one hundred eleven thousand two hundred ninety

61. A shoe store received a shipment of sneakers. The number of boxes received in each sneaker size is shown in the table below.

Sneaker Shipment

Size	Number of Boxes
6	17
7	20
8	40
9	48
10	15

Nicholas randomly chooses a box from the shipment. What is the probability that the box contains a pair of size 8 sneakers?

- A. $\frac{1}{7}$
- B. $\frac{1}{5}$
- C. $\frac{2}{7}$
- D. $\frac{2}{5}$

67. The formula below can be used to find the distance a space shuttle travels during the first 8 minutes of its return to Earth.

$$d = 8r \quad \begin{array}{l} d = \text{distance in miles} \\ r = \text{speed in miles per minute} \end{array}$$

When the speed increases by 3.5 miles per minute, by how many miles will the distance traveled in 8 minutes increase?

- A. 28
- B. 16
- C. 11.5
- D. 3.5

70. Each year, Ms. Jefferson plants a vegetable garden with an area of 48 square feet. This year, her garden will have an area of 48 square feet but the length will be twice as long. How will this year's width compare with last year's width?

- A. It will be $\frac{1}{2}$ as wide this year.
- B. It will be 2 times as wide this year.
- C. It will be $\frac{1}{4}$ as wide this year.
- D. It will be 4 times as wide this year.



71. Kris has a spinner divided into three different-colored parts. She spun the arrow on the spinner 30 times and recorded the results in the chart below.

Kris's Spinner Results

Color	Number of Times Arrow Landed on Color
Blue	16
Red	5
Yellow	9

Kris will spin the arrow on the spinner 90 times. Based on the results in the chart, which is the **best** prediction for the number of times the arrow will land on **yellow**?

- A. 15
- B. 18
- C. 27
- D. 45

72. Betty puts 25 cents in a parking meter for each 10 minutes she plans to park her car. Which table shows the amount Betty puts in the meter to park for different lengths of time?

Parking Meter Cost

A.

Minutes	Total Cost (in cents)
10	25
20	35
30	45
40	55

Parking Meter Cost

B.

Minutes	Total Cost (in cents)
10	25
20	50
30	75
40	100

Parking Meter Cost

C.

Minutes	Total Cost (in cents)
25	10
50	20
75	30
100	40

Parking Meter Cost

D.

Minutes	Total Cost (in cents)
25	10
50	25
75	35
100	50

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“Borax Crystal Snowflakes” (pp. 2–3) by Janeen R. Adil, as it appeared in *Cricket*, December 2005, Volume 33, Number 4. Published by Carus Publishing Company. Copyright © 2005 by Carus Publishing Company.

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